

Overseas DSIF 64-m Antenna Project Status

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The status of construction of two 64-m-diameter steerable paraboloid tracking antennas being installed near Canberra, Australia and Madrid, Spain is presented for the January/February 1971 reporting period. The antennas are being constructed by the Collins Radio Company, Dallas, Texas, under JPL contract.

I. Introduction

Two existing 26-m-diameter antenna stations at overseas locations are being upgraded to 64-m antenna stations. This effort includes the construction of two 64-m antenna instruments and requisite support facilities. (See Refs. 1 and 2 for earlier reports on the upgrading effort.)

A fixed-price contract was effected with the Collins Radio Company, Dallas, Texas, on August 14, 1969. The contractual period for construction of the Spanish antenna is 40 mo and that for the Australian instrument is 31 mo. The contract is presently in its eighteenth month.

Figure 1 shows a cross section of the 64-m antenna and identifies the major components. Figure 2 lists the sub-

contractors to the Collins Radio Company who are responsible for the fabrication of these components and gives the status of the components through the January/February reporting period.

II. Construction at Australian Site

As a structural support element, the Australian antenna pedestal (Fig. 3) is essentially complete. However, the architectural and engineering portions of the pedestal interior and placement of facility equipment within the pedestal have yet to be completed.

Atop the pedestal, the azimuth radial bearing runner and the azimuth bull gear have been installed and the hydrostatic thrust bearing runner has been positioned in

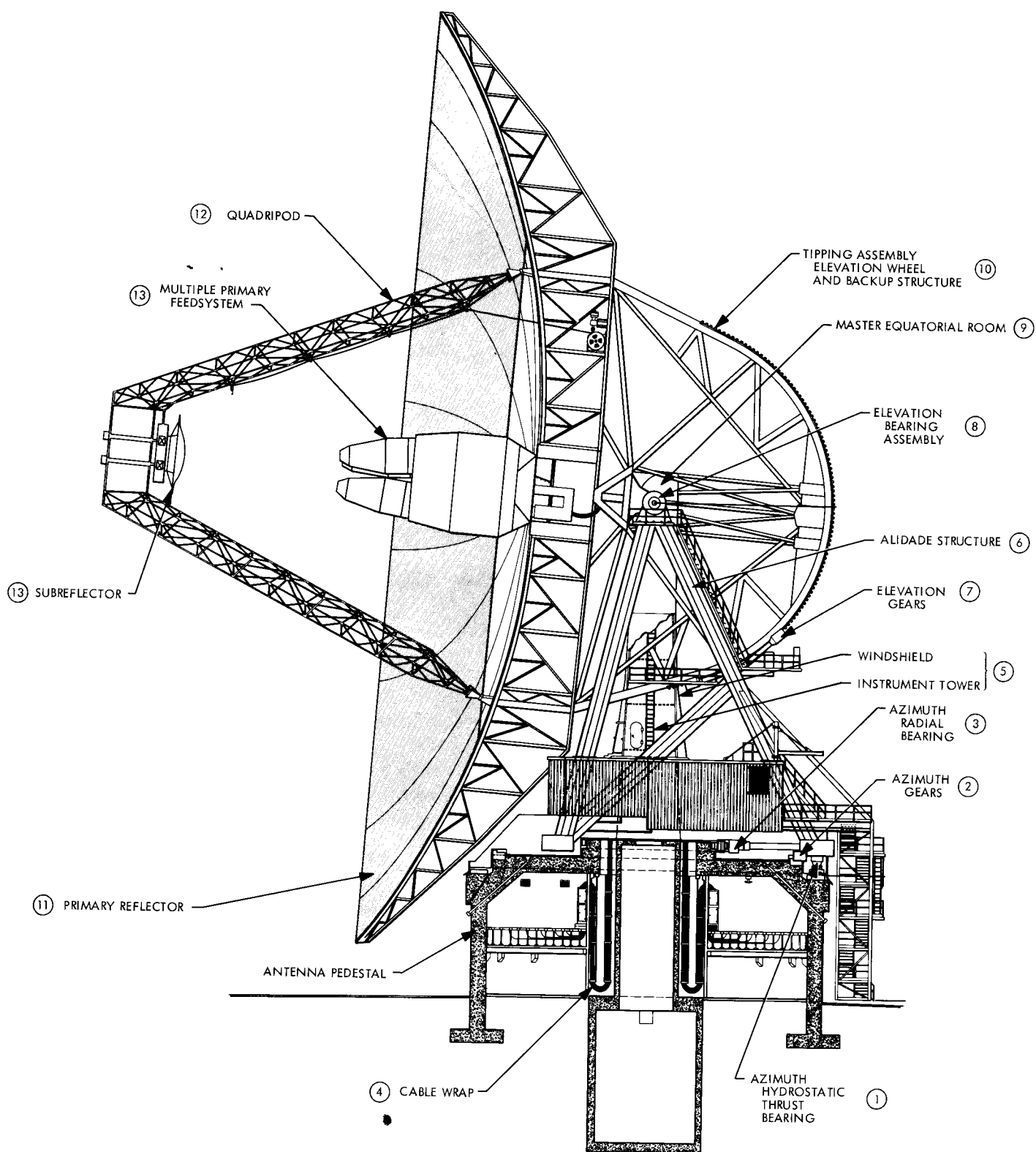


Fig. 1. Cross section of antenna

ITEM (FIG. 1)	COMPONENT	SUBCONTRACTOR	AUSTRALIAN SITE						SPANISH SITE					
①	HYDROSTATIC BEARING													
	RUNNER	WESTERN GEAR	■	▲	▼	○			■	▲	▼	○		
	PADS	WESTERN GEAR	■	▲	▼	○			■	▲	▼	○		
	HYDRAULICS	HYDRANAMICS	■	▲	▼	○			■	▲	▼	○		
②	AZIMUTH GEARS													
	BULL GEAR	PHILADELPHIA GEAR	■	▲	▼	○			■	▲	▼	○		
	REDUCERS	PHILADELPHIA GEAR	■	▲	▼	○			■	▲	▼	○		
③	AZIMUTH RADIAL BEARING													
	RUNNER	WESTINGHOUSE	■	▲	▼	○			■	▲	▼	○		
	TRUCKS	WESTERN GEAR	■	▲	▼	○			■	▲	▼	○		
④	CABLE WRAP	CAPITAL WESTWARD	■	▲	▼	○			■	▲	▼	○		
⑤	INSTRUMENT TOWER/WIND SHIELD	PRECISION FABRICATORS	■	▲	▼	○			■	▲	▼	○		
⑥	ALIDADE													
	STRUCTURE	PRECISION FABRICATORS	■	▲	▼	○			■	▲	▼	○		
	BUILDING	PRECISION FABRICATORS	■	▲	▼	○			■	▲	▼	○		
⑦	ELEVATION GEARS													
	BULL GEAR	PHILADELPHIA GEAR			□	△	▽	○			□	△	▽	○
	REDUCERS	PHILADELPHIA GEAR			□	△	▽	○			□	△	▽	○
⑧	ELEVATION BEARING	NATIONAL STEEL & SHIP BUILDING	■	▲	▼	○			■	▲	▼	○		
⑨	MASTER EQUATORIAL ROOM	LECKEMBY CO.			□	△	▽				□	△	▽	
⑩	TIPPING ASSEMBLY													
	ELEVATION WHEEL	COEUR D'ALENES	■	▲	▼	○					□	△	▽	○
	BACKUP STRUCTURE	COEUR D'ALENES	■	▲	▼	○					□	△	▽	○
⑪	REFLECTOR PANELS	RADIATION SYSTEMS INC			□	△	▽				□	△	▽	
⑫	QUADRIPOD	PRECISION FABRICATORS			□	△	▽	○			□	△	▽	○
⑬	TRICONE ^a													
	SERVO ^b													
	ELECTRONICS	COLLINS			□	△	▽	○			□	△	▽	○
	HYDRAULICS	HYDRANAMICS	■	▲	▼	○					□	△	▽	○
^a SEPARATE CONTRACT WITH PHILCO FORD; FOLLOWS COLLINS EFFORT. ^b NOT ILLUSTRATED			JUL/AUG SEP/OCT NOV/DEC	JAN/FEB MAR/APR MAY/JUN	JUL/AUG SEP/OCT NOV/DEC	JAN/FEB MAR/APR MAY/JUN	JUL/AUG SEP/OCT NOV/DEC	JUL/AUG SEP/OCT NOV/DEC	JAN/FEB MAR/APR MAY/JUN	JUL/AUG SEP/OCT NOV/DEC	JAN/FEB MAR/APR MAY/JUN	JUL/AUG SEP/OCT NOV/DEC	JAN/FEB MAR/APR MAY/JUN	JUL/AUG SEP/OCT NOV/DEC
SCHEDULED COMPLETED □ ■ FABRICATION △ ▲ DELIVERY TO SITE ▽ ▼ INSTALL ○ ● TEST			1970	1971		1972		1970	1971				1972	

Fig. 2. Major components and status of antenna

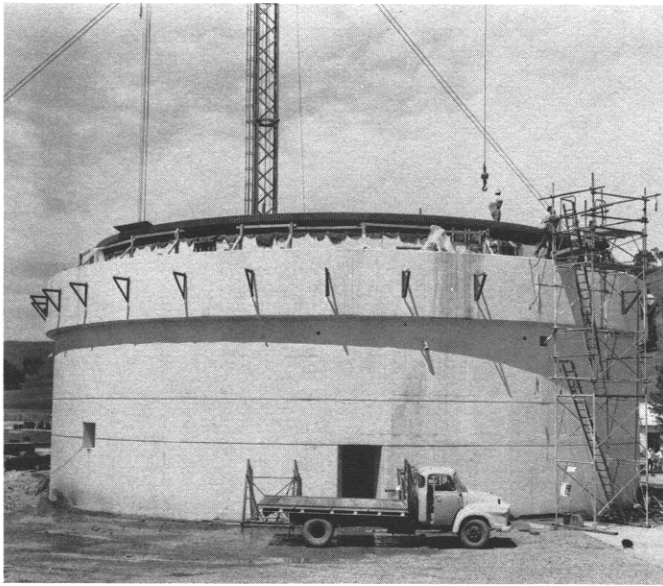


Fig. 3. Antenna pedestal at Australian site

preparation for final alignment and grouting. The remainder of the runner sole plates, the last items required for completion of installation of this critical path element, was received at the site on February 16. Grouting is expected to begin near the end of this reporting period. During the next reporting period, the hydrostatic bearing runner grouting will be completed and erection of the alidade structure will begin.

III. Construction at Spanish Site

Construction at the Spanish site began on June 22, 1970. Figure 4 shows the status of the pedestal construction. Lift number 8 was completed on February 10, 1971.

Figure 5 shows an overall view of the construction site. During excavation, granite outcroppings were encountered which required considerable blasting and slowed progress. The site construction, however, is well ahead of schedule.

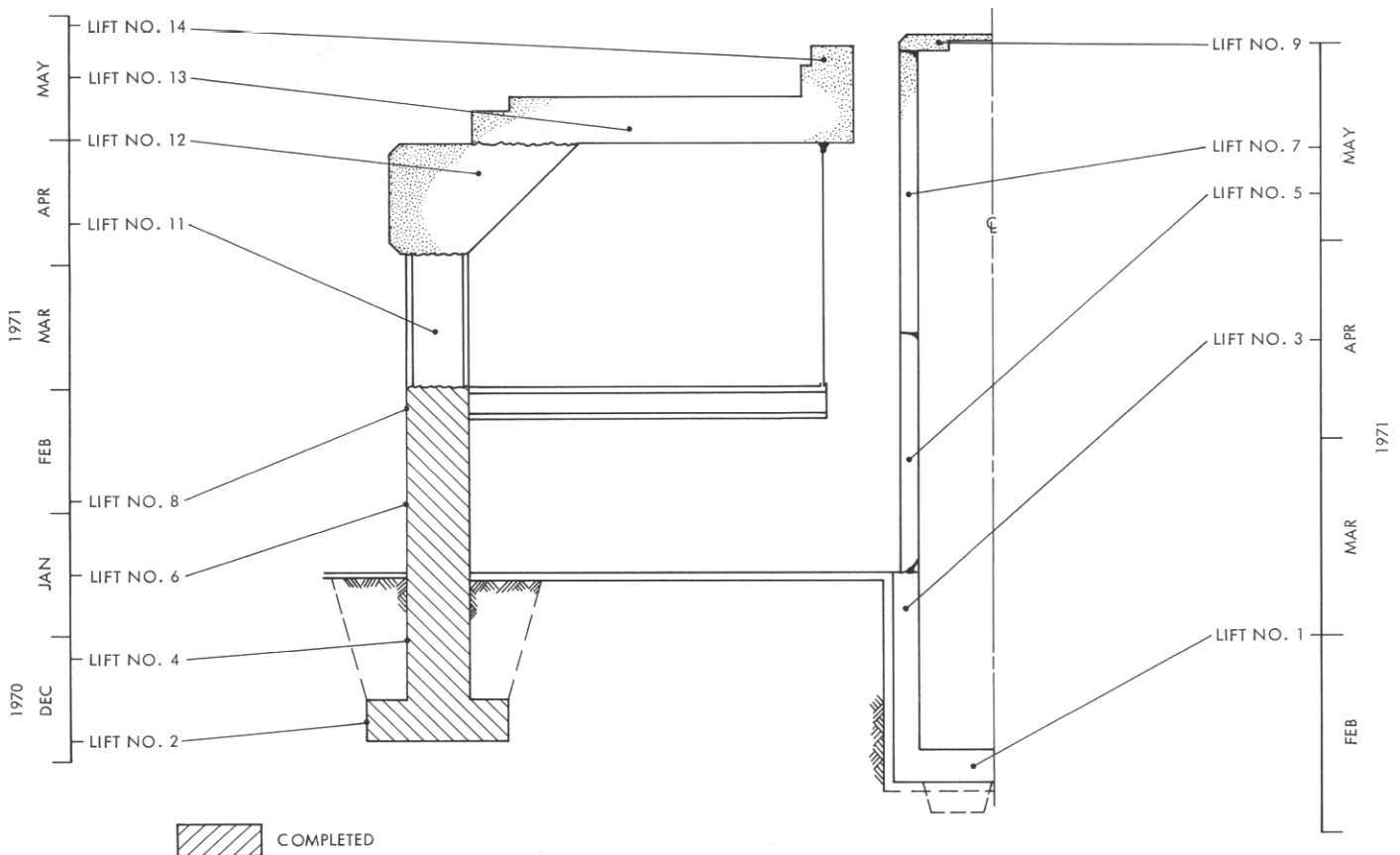


Fig. 4. Status of pedestal construction at Spanish site

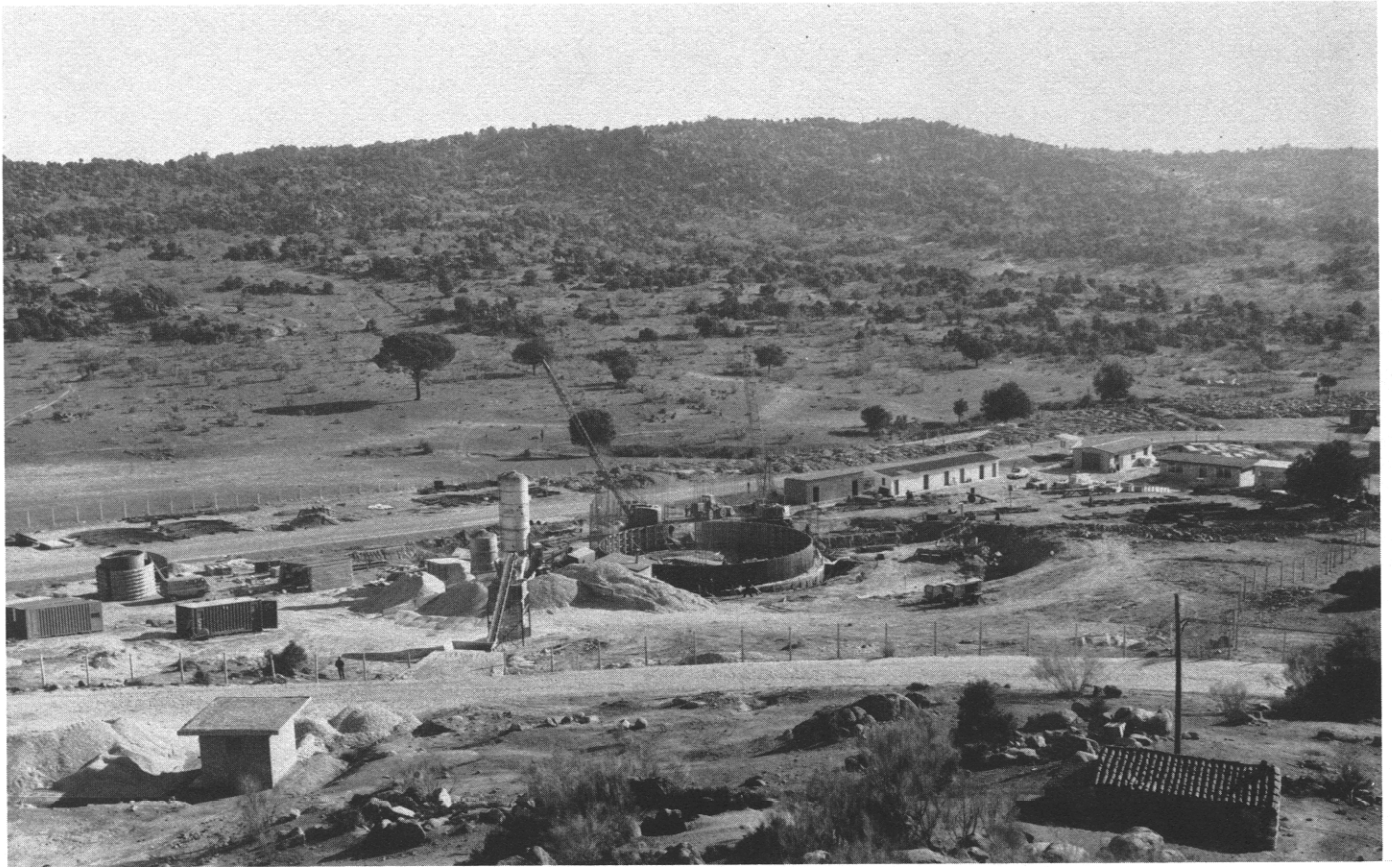


Fig. 5. View of Spanish construction site

References

1. Casperson, R. D., and Lord, W. W., "Overseas 210-ft-diam Antenna Project," in *The Deep Space Network*, Space Programs Summary 37-65, Vol. II, pp. 154-158. Jet Propulsion Laboratory, Pasadena, Calif., Sept. 30, 1970.
2. Casperson, R., Kroll, G., and Kushner, L., "DSS 61/63 Facility Modifications and Construction," in *The Deep Space Network*, Space Programs Summary 37-66, Vol. II, pp. 154-158. Jet Propulsion Laboratory, Pasadena, Calif., Nov. 30, 1970.